

The opinion in support of the decision being entered today was not written for publication and is not precedent of the Board.

Paper No. 22

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOHN P. HILL

Appeal No. 1998-0165
Application No. 08/566,270

ON BRIEF

Before THOMAS, JERRY SMITH, and BLANKENSHIP, Administrative
Patent Judges.

BLANKENSHIP, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of Claims 1-6, 10, 11, 14, and 17-19.

We affirm.

BACKGROUND

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The invention is directed to a frequency shift key
modulating oscillator. Claim 1 is reproduced below.

1. A system for selectably oscillating at a first or a second oscillating frequency, the system comprising:

an oscillator for providing an oscillating output; and

a switching device for selecting a first or a second impedance in response to a select signal having a voltage, each of said impedances being fixed independently of the select signal voltage, said oscillating output oscillating at the first oscillating frequency if said first impedance is provided and oscillating at the second oscillating frequency if said second impedance is provided, wherein said switching device comprises a transistor driven into a saturation mode if said select signal is at a first voltage and driven into an off mode if said select signal is at a second voltage.

The examiner relies on the following reference:

Anderson	5,367,537	Nov. 22, 1994
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Claims 1-6, 10, 11, 14, and 17-19 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Anderson.

We refer to the Final Rejection (Paper No. 10) and the Examiner's Answer (Paper No. 19) for a statement of the examiner's position and to the Brief¹ (Paper No. 18) for appellant's position. Subsequent to the Final Rejection, amendments have been entered to Claims 5 and 9 (Paper No. 12) and to Claim 13 (Paper No. 15), consistent with the examiner's statement on page 3 of the Answer.

¹We have not considered an initial brief (Paper No. 15) which the examiner held to lack compliance with 37 CFR § 1.192.

OPINION

The rejection of the claims as anticipated by Anderson is set forth on page 4 of the Final Rejection. According to the examiner, all limitations are met by the circuitry shown in Figure 2 of the reference.

Appellant does not submit arguments with respect to separate patentability of any of the claims. Appellant refers to substantially identical language appearing in the two independent claims (1 and 10) on appeal as allegedly distinguishing over the prior art. (See Brief, page 9.) In accordance with the arguments, we consider Claims 1 and 10 as representative of the subject matter on appeal, and decide disposition on that basis. See 37 CFR § 1.192(c)(7).

Appellant argues that the language which purportedly distinguishes over the reference sets forth "a switching device [Claim 1; or a "modulator," Claim 10] comprising a transistor driven into a saturation mode if a select signal is at a first voltage and driven into an off mode if the select signal is at a second voltage." (Id.)

As stated in the Abstract of the reference, Anderson discloses a frequency shift keying modulating circuit that produces two different frequencies depending upon "the state of a PIN switching diode in parallel with the reactive element." Anderson's detailed description of the invention discloses how the selection of frequencies is implemented.

[W]ith reference to FIG. 2, dashed block 20 shows a pair of selectable low impedance signal path[s] from the base of transistor 17 to ground. A high logic level from data stream 23' on data line [40] causes transistor switch 29 to turn on resulting in a forward biased PIN diode 27' through bias resistors 22 and 28. With PIN diode 27' conducting, inductor 26' is bypassed as a circuit element and the effective low impedance signal path is through SAW transducer 21' [sic, 21]. SAW transducer 21' [sic, 21] has a natural stand-alone resonant frequency of nominally 300 MHZ consistent with the Colpitts oscillator central frequency. Capacitor 24 is nominally 27 pF and provides for DC blocking but has no consequential effect upon the oscillatory loop. A low logic level on data line 23' [sic, 40] causes transistor switch 29 to turnoff resulting in a non-conducting PIN diode 27'. With PIN diode 27' not conducting, inductor 26' in combination with SAW transducer [21] is the effective low impedance signal path.

Anderson, column 3, lines 18 through 35.

Thus, the "switching device" includes transistor switch 29, which, corresponding to a high and low voltage level from

data stream 23', has an "on" state (saturation mode²) and an "off" state. The impedance of the combination including PIN diode 27' and inductor 26' changes in accordance with the "on" and "off" state of transistor switch 29. In the terms of appellant's Claims 1 and 10, the PIN diode forms a part of the "first or a second impedance" selected by the "switching device," which includes transistor switch 29. The argued differences between the claims and Anderson are thus found in the reference.

Appellant's main argument regarding the reference appears to be that the Anderson device requires a PIN diode for proper operation. The argument is simply irrelevant with respect to the claims as drafted. Appellant appears to be comparing disclosure to disclosure, rather than addressing the claims at issue. However, claims are to be given their broadest reasonable interpretation during prosecution, and the scope of a claim cannot be narrowed by reading disclosed limitations

²The artisan knew that a transistor used as a switch -- as opposed to functioning as a linear amplifier -- most commonly operates in saturation mode when "on." See, e.g., Raymond B. Yarbrough, Electrical Engineering Reference Manual, Fifth Edition (1990) at 10-9 ("Most logic circuits use these two extreme regions [i.e., saturation and cutoff regions for an NPN transistor] to define the two states needed in binary logic.")(copy enclosed).

into the claim. See In re Morris, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989); In re Prater, 415 F.2d 1393, 1404, 162 USPQ 541, 550 (CCPA 1969).

Appellant may also be arguing that the PIN diode in the reference, rather than the switching transistor, should be considered as comprising the "switching device" or the "modulator." Although the Abstract of Anderson, standing alone, might suggest that the PIN diode performs the functions claimed with respect to the "switching device" or "modulator," the noted detailed description of Anderson's disclosure establishes that circuitry including transistor switch 29 performs the functions recited in appellant's Claims 1 and 10.

Although it is axiomatic that claims are broader than any disclosed embodiment, we note another argument that compares disclosure to disclosure:

Applicant submits that the impedance of his recited transistor changes depending on the transistor's mode of operation (saturation mode or off mode). By this arrangement, no additional components, such as inductor 26' or PIN diode 27' of Anderson, are necessary to facilitate switching between a first and second oscillator frequency.

(Brief, page 10.) The argument is contrary to appellant's disclosure. As disclosed, for example, in the specification at page 31, lines 16 through 23 and in Figure 12, the combination of at least transistor Q_{12} , resistor R_{28} , and capacitor C_{21} is necessary for selecting between two different impedances and ultimately two different frequencies. In the sense that inductor 26' and PIN diode 27' are necessary in the reference "to facilitate switching between a first and second oscillator

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frequency," appellant's disclosed embodiment requires resistor R_{28} and capacitor C_{21} for the same purpose -- as circuit elements in addition to the transistor which are necessary to yield the "first" and the "second" impedance.

Since appellant has failed to show that the examiner erred in the finding of anticipation, we sustain the rejection of Claims 1 and 10 over Anderson. We also sustain the rejection of the claims dependent on 1 and 10, as appellant has not argued their limitations separately.

CONCLUSION

The rejection of Claims 1-6, 10, 11, 14, and 17-19 is affirmed.

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No time period for taking any subsequent action in
connection with this appeal may be extended under 37 CFR
§ 1.136(a).

AFFIRMED

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JAMES D. THOMAS)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
JERRY SMITH)	
Administrative Patent Judge)	APPEALS AND
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)	INTERFERENCES
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HOWARD B. BLANKENSHIP)	
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